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July 18, 2019

VIA ELECTRONIC FILING
The Honorable Jocelyn G. Boyd
Chief Clerk/Administrator
Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210

RE: South Carolina Energy Freedom Act (H.3659) Proceeding Related to Duke Energy Carolinas, LLC and Duke Energy Progress, LLC for the Commission to Review the Community Solar Programs Established Pursuant to Act 236 of 2014 and to Solicit Information on Existing Programs from the Electrical Utility S.C. Code Ann. Section 58-41-40 (B)(1)
Docket Nos. 2019-210-E and 2019-211-E

Dear Ms. Boyd,

On June 18, 2019, the Public Service Commission of South Carolina ("Commission"), pursuant to S.C. Code Ann. § 58-41-40(B)(1), issued a letter instructing Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (the "Companies") to file a report regarding their Community Solar programs. In compliance with the Commission's June 18th instructions, the Companies are providing the Commission with the attached report.

Should you have any questions regarding this request, please do not hesitate to contact me.

Sincerely,

Rebecca J. Dulin

Attachments

cc: Ms. Becky Dover, SC Department of Consumer Affairs
Ms. Carri Grube-Lybarker, SC Department of Consumer Affairs
Mr. Jeffrey M. Nelson, Office of Regulatory Staff
Mr. Richard L. Whitt, Austin & Rogers, P.A.
Ms. Heather Smith, Duke Energy Corporation

Report of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC on Existing Shared Solar Programs

Docket No. 2019-210-E
Docket No. 2019-211-E
July 18, 2019

I. <u>Introduction</u>

In accordance with S.C. Code Ann. Section 58-41-40(B)(1), enacted by Act 62, Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP," together with DEC, the "Companies") are required to provide the Public Service Commission of South Carolina (the "Commission") a report to review community solar programs established pursuant to the South Carolina Distributed Energy Resource Program Act ("Act 236"). Act 236 (specifically S.C. Code Ann. Section 58-39-130(A)) permitted electrical utilities to apply to the Commission for approval to participate in a distributed energy resource program. In Docket No. 2015-55-E (for DEC) and Docket No. 2015-53-E (for DEP), the Companies submitted their Applications to each implement a Distributed Energy Resource program ("DER Program") to further the purposes and goals of Act 236.

The Shared Solar Program (the "Program") is a component of the suite of DER Programs approved by the Commission on July 15, 2015, in Order No. 2015-514 and Order No. 2015-515 in the above-referenced dockets. As described in the Companies' applications in the dockets listed above, the Program was developed to "offer access to the benefits of solar PV via 'shared solar' wherein multiple customers, particularly those with physical, financial, or other limitations to installing solar PV on-premise, can subscribe to and share in the economic benefits from one renewable energy facility." Application of Duke Energy Carolinas, LLC, at 11, filed on February 9, 2015, in Docket No. 2015-55-E; Application of Duke Energy Progress, LLC, at 11, filed on February 9, 2015, in Docket No. 2015-53-E.

In addition to their regular energy bill, participants pay a monthly shared solar subscription fee to fund a portion of a centrally-located solar energy facility. Participants can choose the amount of capacity to which they want to "subscribe," which is limited to such participant's historical demand (and capped at 500 kW for DEC non-residential participants). In exchange for the monthly subscription fee, the participant receives a monthly energy bill credit from the applicable Company equal to that participant's pro rata share of actual generation output produced by the shared solar facility. The incremental and avoided costs associated with the Program are recovered by the Companies through the fuel clause.

Pursuant to the Settlement Agreement approved by the Commission in Order No. 2015-514 and Order No. 2015-515, the Companies also offer a low-moderate income ("LMI") customer shared solar program, in which participants' application fee and initial subscription charges are waived.

DEC has entered into purchase power agreements ("PPAs") with two sites for the DEC Program, totaling 3 megawatts ("MW"). DEP entered into a PPA with a 5 MW facility to comply with the utility-scale solar portion of its DER Program, and subsequently dedicated 1 MW of that facility to the DEP Program. The DEP Program began taking customer enrollments in July 2018 and the DEC Program in January 2019, the timing difference based on when the solar facilities were completed.

II. Standard Offering Program: Overview

Customers can apply to enroll in the Program through Duke Energy's website[1] or by calling Duke Energy's Renewable Service Center and speaking with a Smart Energy Specialist.

After applying to the Program, if a customer is determined to be eligible, they are billed an application fee and initial subscription charge through their normal electric bill. Once they have submitted payment for these items, they are enrolled in the Program and can begin earning energy credits. Once enrolled in the Program, each participating customer can log-in to their personal My Own Clean Energy customer portal. The customer portal includes a dashboard and is a tool that customers can use to view items such as solar production from their site, their savings to date and return on investment. Table 1 provides an overview of the charges and credits given to customers in the Standard Offering of the Program.

Table 1: Standard Offering Fee and Credit Structure

	DEC	**DEP**
Application Fee	$20.00	$20.00
Initial Subscription Charge[1]	$50.00 per kW subscribed (residential customers) $100.00 per kW subscribed (non-residential customers)	
Monthly Subscription Charge	$6.00 per kW subscribed[2]	$6.25 per kW subscribed[2]
Monthly Energy Credit	6.04 cents per kWh per month	6.341 cents per kWh per month

Notes:
1. Following completion of each Program year, which concludes 12 months following the beginning date of the Customer Enrollment period, the Initial Subscription Charge for new Program capacity is reduced by $5.00 per kW for residential applicants and $10.00 per kW for non-residential applicants.
2. Based on the Customer's pro rata share of the capacity of the Program facility.

i. DEC Standard Offering

The DEC Program began taking customer enrollments in January 2019, to fulfill 2,600 kW of capacity. The DEC Program was fully subscribed within just two months due to a high level of solar awareness and interest among customers. Table 2 provides an overview of customer participation in DEC's Program.

Table 2: DEC Shared Solar Standard Offering Participation as of June 30, 2019

DEC Shared Solar Standard Offering Participation	
Number of Customers	280
Subscribed Capacity	2,600 kW

[1] https://www.duke-energy.com/scsharedsolar

Remaining Capacity	0 kW
% Subscribed	100%

DEC utilized a variety of marketing and communications channels to inform and educate customers about the Program, including: a press release, direct email, event outreach, presentations to universities and local city organizations, website banners, and electronic newsletters.

The Duke Energy website also includes a section dedicated to educating customers about the Program. DEC has also partnered with external organizations to reach customers. For example, DEC partnered with an environmental organization, Upstate Forever, which included information on the Program within their newsletter, promoting shared solar to approximately 9,000 of the organization's followers. Partnerships such as these were integral to quickly achieving participation goals.

ii. DEP Standard Offering

The DEP Program opened to take customer enrollments in July 2018, to fulfill 600 kW of capacity. The DEP Program became fully subscribed eleven months after it began. Table 3 provides an overview of customer participation in DEP's Program.

Table 3: DEP Shared Solar Standard Offering Participation as of June 30, 2019

DEP Shared Solar Standard Offering Participation	
Number of Customers	81
Subscribed Capacity (kW)	600 kW
Remaining Capacity (kW)	0 kW
% Subscribed	100%

DEP used marketing and communications channels similar to those used by DEC to inform and educate customers about the Program. However, because the subscription in DEP lagged that in DEC, increased marketing efforts were employed. DEP participated in community outreach events such as a Duke Energy Open House in Florence, a Regional Advisory Board meeting (which includes members who represent cities, municipalities, large businesses, and non-profits), and a Duke Energy Alumni Event, providing information on the Program to community members. This community outreach along with attendance at community events targeting environmentally-focused participants allowed DEP to further develop partnerships with organizations that in turn also help promote the Program within their communities. Some examples of these events include the City of Sumter Earth Day celebration and the Pee Dee Plant and Flower Show in Florence.

DEP learned that additional interactions with customers prior to their decision to enroll in the Program were usually required. These interactions were primarily utilized to discuss monthly fees, monthly credits, and potential cost savings. In addition to the communication methods noted above, DEP found that outbound calling campaigns were successful in enrolling participants—primarily because customers can speak with a person that can explain and answer detailed questions about the Program. The slower adoption rate, even despite the increased dedication and commitment to outreach, in DEP as compared to DEC has been seen not only with the Program, but also among other renewable energy offerings, such as the Solar Rebate Program and Net Metering.

III. Low-Moderate Income (LMI) Program

Customer Participation

As described previously, the Companies also offer an LMI customer program, in which participants' application fee and initial subscription charges (a total value of $120) are waived. Income-qualified customers[2] can subscribe to a total of 2 kW, and they pay the same monthly subscription fee and receive the same monthly energy credit as shown above in Table 1. Table 4 provides an overview of the current subscription levels for the LMI Programs.

Table 4: Shared Solar LMI Participation as of June 30, 2019

Shared Solar LMI Participation		
	DEC	**DEP**
Number of Customers	5	26
Subscribed Capacity	10 kW	52 kW
Remaining Capacity	390 kW	348 kW
% Subscribed	3%	13%

Although the LMI Program waives the upfront fees, obtaining customer enrollment in both DEC and DEP has proven challenging. The Companies continue to explore the most effective methods to encourage LMI customer participation. To date, these methods include refining customer communications to focus more on the cost saving aspects of the Program, marketing to raise customer awareness of solar, and educating customers further about the Program.

Marketing & Application Process

Many LMI customers are not familiar with the Program and benefit from additional interactions with the Companies and other community partners to better understand the concepts underlying the Program. Labor-intensive events and community outreach have proven more successful in reaching customers since someone representing the Program is available to provide additional information and answer questions as needed. Thus, the Companies have engaged with internal Duke Energy teams and linked with other Duke Energy programs that are already in the community to leverage support from across the Companies to better reach LMI customers—bringing them information about multiple opportunities in addition to the Program. Duke Energy District Managers have been integral in event planning and coordination. They also support relationships with key community leaders who can recommend external organizations and events that may serve as additional avenues for promoting the Program. The Duke Energy Neighborhood Energy Saver ("NES") Program has also been a valuable partner, as it uses a community approach to reduce energy bills for thousands of LMI customers throughout the Duke Energy service territory by targeting LMI neighborhoods and working with local leaders to build neighborhood engagement.

[2] Defined as having an annual household income equal to or less than 200% of the poverty level, as set by the U. S. Department of Health and Human Services.

DEP has focused on various marketing efforts with the goal of increasing customer interaction. DEP utilized NES Kickoff Dinners, as well as community and environmentally focused events, and other events hosted by non-profit community organizations. DEP also utilized email and direct mail to invite qualifying customers to many of these events so they could learn more about the Program. However, even in cases where customers were personally invited by Duke Energy with a direct mail piece, there was low attendance and even lower enrollment rates in the Program. For example, 1,500 emails and 4,200 direct mail letters were sent to qualifying LMI residents in Sumter to invite them to a community event, but only 5 customers attended.

DEC experienced similar low attendance. Customers were educated about the Program at the NES Kickoff Dinner and at two Energy Workshops. Attendance was low at the first Energy Workshop, so NES crews and non-profits in the community gave out invitation flyers and DEP sent 2,600 emails and postcards to LMI customers that qualified for the Program. Attendance was slightly improved, but the outreach only resulted in 3 applications and no enrollments.

In addition, the Companies have been working to improve the application process for LMI customers by simplifying the process for verifying income eligibility requirements. The Companies believe such improvements will make the application more customer-friendly and thereby increase the ease of enrollment for LMI customers.

Partnerships

Through these efforts, the Companies have learned that the best way to reach LMI customers is through partnerships with organizations who are able to advocate for the Program within their communities. LMI customers are more motivated to attend events sponsored by local community organizations with whom they have a pre-existing relationship. In response, the Companies have developed, and continue to develop, partnerships with these organizations. For example, the Companies have partnered with the Renewable Energy Transition Initiative ("RETI") and the SC Association of Community Actions Partnerships ("SCACAP"). RETI works to sustainably decrease the energy costs of families with high energy burdens. SCACAP strives to develop and advocate for programs to promote self-sufficiency and improve the quality of life for the LMI community. The organization works with LMI customers on weatherization and has the capability to verify income. The Duke Energy Shared Solar Program Manager attends SCACAP's bi-annual conferences to hold training workshops and participate in panels to engage Community Action Agencies in the Program. Continued partnerships with the Community Action Partnership agencies and other community organizations will allow the Companies to reach customer segments who may qualify for and benefit from the LMI program. The Companies continue to expand relationships and generate new partnerships, as they are critical to continued participation growth in the LMI program. In addition to community outreach events, these partnerships resulted in combined marketing campaigns and streamlined income verification.

The Companies' experience in managing the LMI Program has shown that the inherent variability of solar production is particularly challenging for LMI customers. For example, due to the seasonality of solar production, the monthly fee in the winter months may exceed the monthly energy credit (or not be as financially advantageous for the customer). Because of this, some LMI customers may cancel their participation after a month of less-favorable energy credits. The

Companies believe that absent a guaranteed monthly cost savings, enrolling LMI customers in a shared solar program will have significant challenges.

IV. Costs

Both incremental costs and avoided costs associated with the Program are recovered by the Companies through the fuel clause. Incremental costs include: the subsidy utilized to lower subscription fees for the Program, and general and administrative costs of the Program. Avoided costs include the bill credits. The energy credit rate paid to the customer is equal to the avoided cost at the time the Companies initially filed the Program tariffs in 2015. Table 5 provides an overview of those incremental and avoided costs.

Table 5: Total Shared Solar Program Costs as of May 31, 2019

Total Shared Solar Program Costs as of May 31, 2019		
	DEC	**DEP**
Incremental Costs		
General & Administrative Costs[1]	$ 248,348	$ 292,143
Program Incentive	$ 36,943	$ 3,247
Total Incremental Costs	***$ 285,291***	***$ 295,390***
Avoided Costs		
Avoided Cost of PPA	$ 40,901	$ 9,715

Notes:

1. Note that General & Administrative Costs shown do not include IT project costs incurred to adapt the Companies' billing systems to the Program transaction. They are also net of Application Fees and Initial Subscription Fees of $198,070 in DEC and $23,460 in DEP.

General & Administrative Costs ("G&A") for the Program primarily relate to marketing expenses needed to solicit customer participation. From January 2019 to May 2019, while the Program was being marketed for each Company, average monthly G&A costs were approximately $5.33 per kW of capacity in DEC and $13.00 per kW of capacity in DEP. The difference in the per kW cost is due to the increased marketing needed to subscribe the Program for DEP, as well as the larger scale of the Program for DEC. The marketing needed to inform, educate, and enroll LMI customers in the Program also has an impact on overall Program costs.

V. Conclusion

Through the Program, the Companies have learned many valuable lessons about the efforts necessary to develop the Program and achieve Program success. Critical among these lessons is how to best reach customers, educate them on the Program, and encourage their participation. Additionally, the provisions of Act 236 that allowed some Program costs to be borne by non-participants were critical to creating a Program that was attractive to potential participants. Without the opportunity to achieve noticeable cost savings, many customers claimed they would not have been interested in the Program. Act 236 has increased the interest in, and knowledge of, renewables throughout South Carolina. This increased familiarity with solar, combined with the Companies' learnings thus far, will likely make it easier to market and promote the Program.

In the future, partnerships with community organizations will need to take on an even greater role in promoting the Program. Although these partnerships take time to develop, they are crucial to the Program's success—particularly within the LMI program, where additional interactions may be helpful in educating customers and encouraging participation.

The Companies remain committed to the success of the Program and to exploring the potential for additional shared solar programs in the future. As highlighted within a recent Duke Energy Illumination news article, Chris Keller, a current subscriber to the Program stated, "[i]t's a win-win . . . [g]ood for (Duke Energy), good for me, good for the planet."